708 Heartland Trail
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Madison, WI 53717

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www.TRCsolutions.com

June 18, 2018

Mr. Mike Schmoller
Hydrogeologist
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

Subject: Polychlorinated Biphenyls (PCBs) in Rain Garden – Interim Investigative Summary Follow-up

Dear Mr. Schmoller:

As requested by Madison Kipp Corporation (MKC), TRC Environmental Corporation (TRC) has been investigating the presence and possible migration of polychlorinated biphenyls (PCBs) to the rain garden just north of the MKC facility which is located at 201 Waubesa Street, Madison, Wisconsin (the site, Figure 1). This letter summarizes the most recent actions completed as outlined in the November 2017 submittal of the Rain Garden – Interim Investigation Report and Proposed Excavation Work Plan (TRC, 2017).

Per the November 2017 report, TRC recommended that the outfall and manhole MH-1A be monitored during heavy snow melt and rainfall events during the 2017-2018 winter and spring seasons. The focus was to monitor sediment accumulation and if possible collect samples after heavy snow melts and high intensity rainfalls (accumulating greater than 1 inch of rainfall in a 24-hour period time).

Monitoring

TRC monitored manhole MH-1A and the outfall area for sediment accumulation between December 2017 and May 2018 based on snow melt and rain events. The locations of each monitoring point along with site features are shown on Figure 2. Based on actual snow melt and high intensity rain fall events, monitoring was broken up into two main periods.

December 2017 – February 2018

Between December 2017 and February 2018, only one rain event resulted in greater than 1 inch of rainfall accumulation within one day and the focus during these months, was sediment accumulation into the storm sewer network from heavy snow melting events. On February 21, 2018, TRC inspected manhole MH-1A and the outfall into the rain garden. Sediment was observed in MH-1A and one sample was collected for PCBs. The sediment consisted of a fine to coarse material. Laboratory analytical results reported PCBs at a concentration of 0.33 milligram per kilogram (mg/kg) in this sample. The outfall area was inspected as well and only organic materials (i.e., leaves) were observed within the outfall pipe and no sample could be collected.

March 2018 – May 2018

Between March and May 2018, snow melt was observed and four rain events occurred resulting in greater than one inch of rainfall accumulation within one days' time. All four rain events were recorded in May 2018 and none were observed during the months of March or April. Periodic inspections of manhole MH-1A were completed following select rain events in March and April but no significant changes in sediment loading were observed and therefore no samples were collected. On May 10, 2018, manhole MH-1A and the outfall pipe were inspected and fine to coarse grain sediment was observed at both locations with some organics present as well. A sample was collected from manhole MH-1A and from within the outfall pipe. Laboratory analytical results reported PCBs in manhole MH-1A sample at concentration of 0.15 mg/kg and at concentration of 1.9 mg/kg at the outfall area.

Table 1 includes a summary of the results collected through May 2018 and the laboratory analytical report for the February and May 2018 samples are included in Attachment 1.

Discussion

Manhole MH-1A

Monitoring results between December 2017 and May 2018 indicate that sediment accumulation within manhole MH-1A contains PCBs at low concentrations below the Natural Resources (NR) 720 industrial direct contact soil residual contaminant level (RCL) for PCBs. Sediment materials are consistent with previous samples collected in 2017 and consist of a fine to coarse grain material.

Outfall

Monitoring results indicate that sediment observed within the outfall pipe area contained PCBs at a concentration of 1.9 mg/kg. However, based on the concentration of PCBs observed in upstream sediments from manhole MH-1A and the negative drainage pitch of the outfall pipe and outfall pipe discharge area, the higher detections of PCBs could be related to 2017 discharges that are present in the rain garden (pending upcoming excavation). As previously discussed, the outfall pipe and immediate area are negatively pitched which can cause back and forth flow of water and sediment from the rain garden. This could, in this case, have caused migration of PCB impacted sediments known to be present in the rain garden back into the outfall pipe.

In addition, the lack of sediment observed in the outfall pipe from December 2017 to February 2018 corroborates that sediment deposits in the outfall pipe during high intensity rain events. During these rain events, additional sediment load may come from upstream in the storm sewer network, but it is also known that sediment from the garden washes back and forth into the outfall pipe due to the high standing water in the rain garden. The lack sediment accumulation in the outfall pipe could also be the result of the relining work completed in 2017 between manhole MH-3W and MH-1A.

Recommendations

Based on the results from monitoring completed between December 2017 and May 2018, MKC plans to excavate the outfall area as outlined in the November 2017 Rain Garden – Interim Investigation Report and Proposed Excavation Work Plan (TRC, 2017).

Following excavation, the outfall area/pipe and manhole MH-1A will continue to be monitored for the remainder of 2018. The frequency of monitoring will be dependent on high intensity rain events (greater than one inch of rainfall accumulation in a 24-hour period). Following large rain events, TRC will visit the Site and observe the conditions in the outfall area/pipe and manhole MH-1A. A sample of sediment will be collected from each location, if present, quarterly (one in the period July – September and one in the period October – December).

TRC will also remove accumulated sediment from MH-1A to reduce the amount of sediment discharging into the rain garden. Accumulated sediment will be removed with dedicated equipment (e.g., wet/dry vacuum) or other hand tools and containerized for disposal.

A documentation report, as outlined in the November 2017 report submittal, will be completed following the rain garden excavation and restoration. TRC will prepare a separate brief letter report following the remaining 2018 monitoring.

If you have questions or comments please feel free to contact Andrew Stehn (608-826-3665) or Katherine Vater (608-826-3663).

Sincerely,

TRC Environmental Corporation

Andrew Stehn, P.E.
Project Engineer

Katherine Vater, P.E.
Project Manger

Attachments: Table
Figures
Attachment 1 - Laboratory Analytical Report

cc: John Hausbeck, Public Health (electronic)
Mark Sheppard, Madison-Kipp Corporation (electronic)
Peter Ramanauskas and Michael Beedle, U.S. EPA (electronic)

Reference

TRC. 2017. Rain Garden – Interim Investigation Report and Proposed Excavation Work Plan. November 29, 2017.

Table 1
Storm Sewer System Sediment Sampling Analytical Results Summary
Madison-Kipp Corporation
201 Waubesa Street, Madison, Wisconsin

		NR 720 RCL		SAMPLE LOCATION AND SAMPLE ID																											
				ROOF DRAIN SAMPLE						PAVED SURFACE SAMPLE[4]							MANHOLE BOTTOM SAMPLE												OUTFALL SAMPLE			
											MH-4A						MH-1NW		MH-1A													
PARAMETER	UNIT	INDUSTRIAL DIRECT CONTACT[2]	HISTORICAL INDUSTRIAL DIRECT CONTACT[3]	MH-3WR	MH-4AR	GUTTER 1	GUTTER 2	MH-2AR	RDO	MH-1A (2)	MH4-TOP	MH-4A	MH-5B	MH-3W	MH-5A	PS-1	MH-1NW-BOTTOM	MH-1NW-BASIN	STORM SEWER	MH-1A(3)-BASIN	MH-1A 9/22/17	MH-1A (10/6/17)	MH-1A (10/17/17)	MH-1A-22118	MH-1A-051018	MH-2W	MH-3W	MH5-PIPE	PIPE	OUTFALL (6/30)	OUTFALL 9/22/17	OUTFALL PIPE-051018
Sample Date	--	--	--	5/22/2017	5/22/2017	5/31/2017	5/31/2017	6/14/2017	6/14/2017	5/31/2017	3/9/2017	5/31/2017	5/31/2017	6/14/2017	6/29/2017	6/30/2017	2/15/2017	6/14/2017	12/28/2016	6/30/2017	9/22/2017	10/6/2017	10/17/2017	2/21/2018	5/10/2018	2/15/2017	2/15/2017	3/9/2017	12/19/2016	6/30/2017	9/22/17	5/10/2018
Matrix [1]	--	--	--	Other	Other	Other	Other	Other	Other	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
PCB-1016	mg/kg	28	21.2	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0074	<0.0081	<0.0078	<0.0088	<0.010	<0.018	<0.0078	<0.0077	<0.0086	<0.010	<0.011	<0.0092	<0.0089	<0.0097	<0.010	<0.0094	<0.0083	<0.014	<0.0086	<0.010	<0.0095	<0.0086	<0.011	<0.0099
PCB-1221	mg/kg	0.883	0.589	<0.0041	<0.0041	<0.0041	<0.0041	<0.0041	<0.0041	<0.0045	<0.0043	<0.0049	<0.0058	<0.0098	<0.0043	<0.0043	<0.0048	<0.0057	<0.0059	<0.0051	<0.0049	<0.0054	<0.0057	<0.0052	<0.0046	<0.0078	<0.0047	<0.0058	<0.0053	<0.0048	<0.0061	<0.0055
PCB-1232	mg/kg	0.792	0.589	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0031	<0.0030	<0.0033	<0.0039	<0.0067	<0.0029	<0.0029	<0.0033	<0.0039	<0.0040	<0.0035	<0.0034	<0.0037	<0.0039	<0.0036	<0.0031	<0.0053	<0.0032	<0.0039	<0.0036	<0.0032	<0.0042	<0.0038
PCB-1242	mg/kg	0.972	0.744	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0048	<0.0046	<0.0052	<0.0062	<0.011	<0.0046	<0.0046	<0.0051	<0.0061	<0.0063	<0.0055	<0.0053	<0.0058	<0.0061	<0.0056	<0.0049	<0.0083	<0.0051	<0.0062	<0.0057	<0.0051	<0.0066	<0.0059
PCB-1248	mg/kg	0.975	0.744	0.20	<0.0053	<0.0053	0.049 J	<0.0053	0.050 J	0.023 J	0.028 J	0.096 J	0.12 J	0.32	<0.0056	<0.0055	0.28	0.10 J	***3.6***	***2.2***	0.11	0.23	0.71	0.33	0.15	***120***	<0.0061	***0.93***	***9.2***	***5.0***	***4.0***	***1.9***
PCB-1254	mg/kg	0.988	0.744	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	0.013 J	<0.0048	<0.0046	<0.0052	<0.0062	0.099 J	0.071 J	0.034 J	0.41	0.086 J	<0.0063	<0.0055	<0.0053	<0.0058	<0.0061	<0.0056	<0.0049	<0.0083	***1.6***	<0.0062	<0.0057	<0.0051	<0.0066	<0.0059
PCB-1260	mg/kg	1	0.744	<0.0024	<0.0024	<0.0024	<0.0024	<0.0024	<0.0024	<0.0026	<0.0025	<0.0028	<0.0034	<0.0058	<0.0025	<0.0025	<0.0028	<0.0033	<0.0034	<0.003	<0.0029	<0.0031	<0.0033	<0.0031	<0.0027	<0.0045	<0.0028	<0.0034	0.37	<0.0028	<0.0036	<0.0032
Total PCBs	mg/kg	0.967	0.744	0.20	<0.0074	<0.0074	0.049 J	<0.0074	0.063 J	0.023 J	0.028 J	0.096 J	0.12 J	0.42	0.071 J	0.034 J	0.69	0.19	***3.6***	***2.2***	0.11	0.23	0.71	0.33	0.15	***120***	***1.6***	***0.93***	***9.6***	***5.0***	***4.0***	***1.9***

Notes:

< = Less than

mg/kg = Milligrams per kilogram

J = Estimated value. Analyte detected at a level less than the reporting limit and greater than or equal to the detection limit.

RCL = residual contaminant level

PCBs = Polychlorinated Biphenyls

Bold and Italics = WDNR Industrial Direct Contact Limit Exceedance

Sample ID ending in "R" indicates the sample is from roof drain adjacent the manhole location (e.g., MH-4AR is the roof drain adjacent MH-4A).

Updated by: A. Stehn 6/7/2018

Checked by: B. Wachholz 6/7/2018

Footnotes:

[1] PCB results for samples with a matrix of "Other" are reported on an as is (wet weight) basis.

[2] As of March 2017, the WDNR updated the industrial direct contact residual contaminant levels for total PCBs and specific Aroclors.

[3] Historical WDNR industrial direct contact RCLs applied at the MKC site.

[4] Paved surface samples collected at the ground surface inlet to the referenced manhole, with the exception of sample PS-1 which was collected from the paved parking lot area just upstream of the rain garden.

Plot Date: 7/11/2017, 10:55:06 AM by BDEEGAN -- LAYOUT: ANSI B (11"x17")
Path: E:\MadisonKIPPCorp\2016_268304\268304-001slm.mxd

Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet (Foot US)
Map Rotation: 0

TRC - GIS

LEGEND

SITE PROPERTY BOUNDARY

MUNICIPAL SUPPLY WELL

BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES, "USA TOPO MAPS" WEB BASEMAP SERVICE LAYER.

0 2,000 4,000 FEET

1 " = 2,000 '

1:24,000

N

TRC
708 Heartland Trail
Suite 3000
Madison, WI 53717
Phone: 608.826.3600

PROJECT:

MADISON-KIPP CORPORATION
201 WAUBESA STREET
MADISON, WISCONSIN

TITLE:

SITE LOCATION MAP

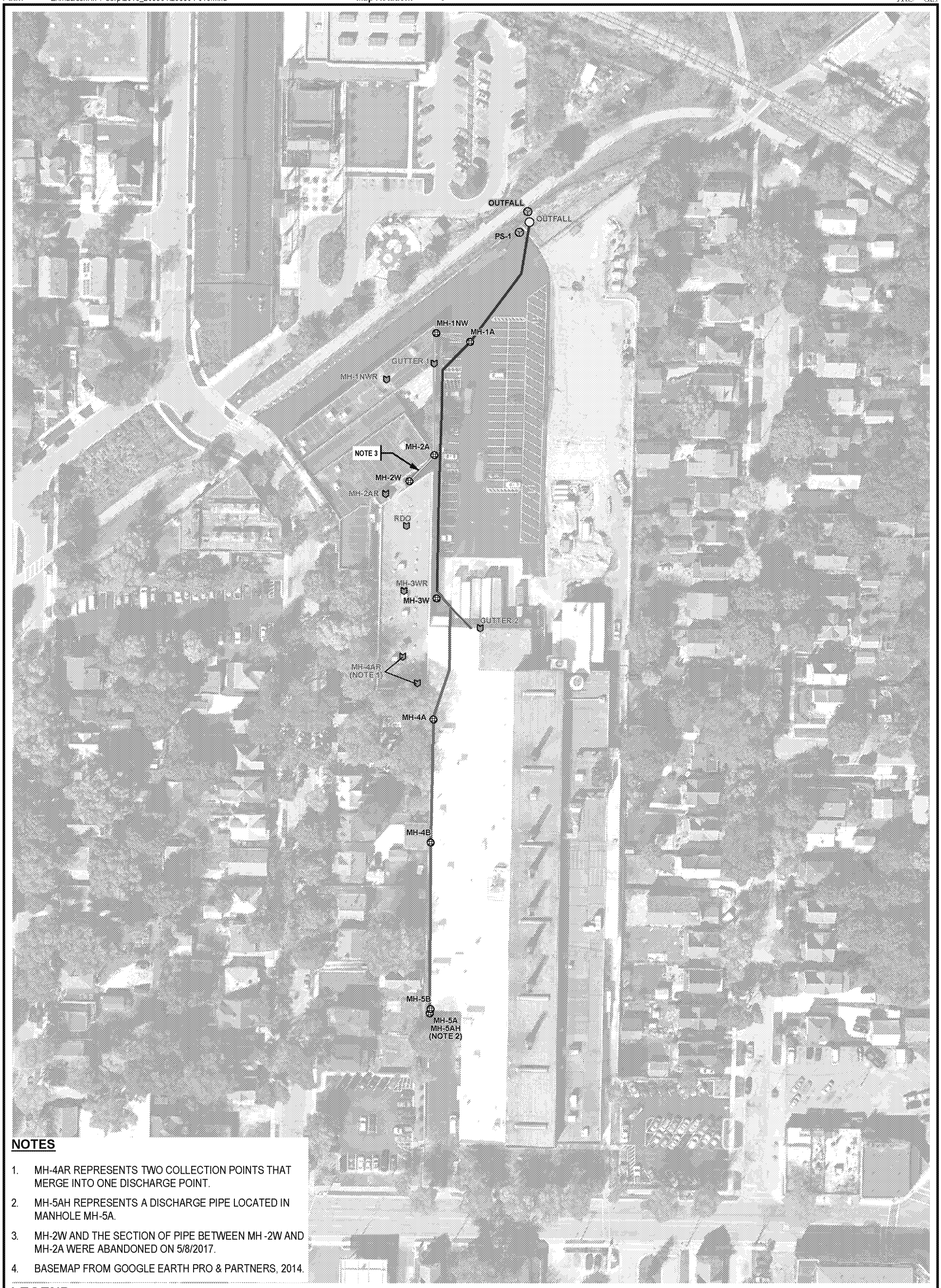
DRAWN BY:	B DEEGAN
CHECKED BY:	A STEHN
APPROVED BY:	S SELLWOOD
DATE:	JULY 2017
PROJ. NO.:	268304
FILE:	268304-001slm.mxd

FIGURE 1

Plot Date: 7/11/2017, 10:52:55 AM by BDEEGAN -- LAYOUT: ANSI B (11"x17")
Path: E:\MadisonKIPPCorp\2016_268304\268304-010.mxd

Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet (Foot US)
Map Rotation: 0

TRC - GIS



NOTES

1. MH-4AR REPRESENTS TWO COLLECTION POINTS THAT MERGE INTO ONE DISCHARGE POINT.
2. MH-5AH REPRESENTS A DISCHARGE PIPE LOCATED IN MANHOLE MH-5A.
3. MH-2W AND THE SECTION OF PIPE BETWEEN MH -2W AND MH-2A WERE ABANDONED ON 5/8/2017.
4. BASEMAP FROM GOOGLE EARTH PRO & PARTNERS, 2014.

LEGEND

- SITE PROPERTY BOUNDARY
- SURFACE SAMPLE LOCATION
- ROOF DRAIN INLET
- MANHOLE/CATCH BASIN
- OUTFALL
- S-1 PIPE SECTION
- S-2 PIPE SECTION
- S-3 PIPE SECTION
- S-3-ABANDONED (NOTE 3)
- S-4 PIPE SECTION

0 100 200 FEET

1 " = 100 '
1:1,200

N

TRC
708 Heartland Trail
Suite 3000
Madison, WI 53717
Phone: 608.826.3600

PROJECT:
MADISON-KIPP CORPORATION
201 WAUBESA STREET
MADISON, WISCONSIN

TITLE:
STORM SEWER INFRASTRUCTURE

DRAWN BY:	B DEEGAN
CHECKED BY:	A STEHN
APPROVED BY:	S SELLWOOD
DATE:	JULY 2017
PROJ. NO.:	268304
FILE:	268304-010.mxd

FIGURE 2

Attachment 1

Laboratory Analytical Report

Pace Analytical®
ECOS Mobile Lab Services

2525 Advance Road
Madison, WI 53718
608.221.8700 Phone
608.221.4889 Fax

March 07, 2018

Andrew Stehn
TRC Environmental Corporation, Inc.
708 Heartland Trail, Ste 3000
Madison, WI 53717

RE: Madison Kipp - Rain Garden Excavation

Enclosed are the analytical results for the samples received by the laboratory on 02/22/2018.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. These results are in compliance with the 2009 NELAC Standards and the appropriate agencies listed below, unless otherwise noted in the case narrative. This analytical report should be reproduced in its entirety.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jessica Esser
Project Manager

Certification List			Expires
ADEQ	Arkansas Department of Environmental Quality	17-065-0	09/26/2018
DODELAP	DOD ELAP Accreditation (A2LA)	3269.01	03/31/2018
ILEPA	Illinois Secondary NELAP Accreditation	003174	04/30/2018
KDHE	Kansas Secondary NELAP Accreditation	E-10384	04/30/2018
LELAP	Louisiana Primary NELAP Accreditation	04165	06/30/2018
NCDEQ	North Carolina Dept. of Environmental Quality Accreditation	688	12/31/2018
NJDEP	New Jersey Secondary NELAP Accreditation	WI004	06/30/2018
ODEQ	Oklahoma Department of Environmental Quality Accreditation	2017-154	08/31/2018
TCEQ	Texas Secondary NELAP Accreditation	T104704504-16-7	11/30/2018
WDNR	Wisconsin Certification under NR 149	113289110	08/31/2018

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608.221.4889 Fax

TRC Environmental Corporation, Inc.	Project: Madison Kipp - Rain Garden Excavation
708 Heartland Trail, Ste 3000	Project Number: 268304
Madison WI, 53717	Project Manager: Andrew Stehn

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MH-1A-022118	A180807-01	Soil	02/21/2018	02/22/2018

CASE NARRATIVE

Sample Receipt Information:
1 sample was received on 02/22/2018. Sample was received on ice. Sample was received in acceptable condition.

Please see the chain of custody (COC) document at the end of this report for additional information.

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TRC Environmental Corporation, Inc.	Project: Madison Kipp - Rain Garden Excavation
708 Heartland Trail, Ste 3000	Project Number: 268304
Madison WI, 53717	Project Manager: Andrew Stehn

MH-1A-022118

A180807-01 (Soil)

Date Sampled
02/21/2018 14:30

Pace Analytical - Madison

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Polychlorinated Biphenyls by EPA Method 8082						**Preparation Batch: A802178**			
PCB-1016	ND	0.0094	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
PCB-1221	ND	0.0052	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
PCB-1232	ND	0.0036	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
PCB-1242	ND	0.0056	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
PCB-1248	**0.33**	0.0067	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
PCB-1254	ND	0.0056	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
PCB-1260	ND	0.0031	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
Total PCBs	**0.33**	0.0094	0.13	mg/kg dry	1	02/26/2018	02/26/2018 17:53	EPA 8082A	
Surrogate: Decachlorobiphenyl			*96.6 %*	*56.6-128*		*02/26/2018*	*02/26/2018 17:53*	*EPA 8082A*	
Surrogate: Tetrachloro-meta-xylene			*108 %*	*69.6-121*		*02/26/2018*	*02/26/2018 17:53*	*EPA 8082A*	
Classical Chemistry Parameters						**Preparation Batch: A802179**			
% Solids	**78.7**		0.00	% by Weight	1	02/26/2018	02/28/2018 11:24	SM 2540B	

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TRC Environmental Corporation, Inc.	Project: Madison Kipp - Rain Garden Excavation
708 Heartland Trail, Ste 3000	Project Number: 268304
Madison WI, 53717	Project Manager: Andrew Stehn

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control

Pace Analytical - Madison

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A802178 - EPA 3570										
Blank (A802178-BLK1)				Prepared: 02/26/2018 Analyzed: 02/26/2018 17:28						
PCB-1016	ND	0.10	mg/kg wet							
PCB-1221	ND	0.10	mg/kg wet							
PCB-1232	ND	0.10	mg/kg wet							
PCB-1242	ND	0.10	mg/kg wet							
PCB-1248	ND	0.10	mg/kg wet							
PCB-1254	ND	0.10	mg/kg wet							
PCB-1260	ND	0.10	mg/kg wet							
Total PCBs	ND	0.10	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.256*		*mg/kg wet*	*0.2400*		*107*	*56.6-128*			
Surrogate: Tetrachloro-meta-xylene	*0.263*		*mg/kg wet*	*0.2400*		*110*	*69.6-121*			
LCS (A802178-BS1)				Prepared: 02/26/2018 Analyzed: 02/26/2018 17:03						
PCB-1248	1.93	0.10	mg/kg wet	2.000		96.6	74.4-123			
Surrogate: Decachlorobiphenyl	*0.227*		*mg/kg wet*	*0.2400*		*94.5*	*56.6-128*			
Surrogate: Tetrachloro-meta-xylene	*0.233*		*mg/kg wet*	*0.2400*		*97.1*	*69.6-121*			
Matrix Spike (A802178-MS1)	**Source: A180807-01**			Prepared: 02/26/2018 Analyzed: 02/26/2018 18:18						
PCB-1248	2.83	0.13	mg/kg dry	2.543	0.329	98.2	61.9-141			
Surrogate: Decachlorobiphenyl	*0.292*		*mg/kg dry*	*0.3051*		*95.7*	*56.6-128*			
Surrogate: Tetrachloro-meta-xylene	*0.333*		*mg/kg dry*	*0.3051*		*109*	*69.6-121*			
Matrix Spike Dup (A802178-MSD1)	**Source: A180807-01**			Prepared: 02/26/2018 Analyzed: 02/26/2018 18:43						
PCB-1248	2.90	0.13	mg/kg dry	2.543	0.329	101	61.9-141	2.55	20	
Surrogate: Decachlorobiphenyl	*0.293*		*mg/kg dry*	*0.3051*		*96.0*	*56.6-128*			
Surrogate: Tetrachloro-meta-xylene	*0.337*		*mg/kg dry*	*0.3051*		*110*	*69.6-121*			

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TRC Environmental Corporation, Inc.	Project: Madison Kipp - Rain Garden Excavation
708 Heartland Trail, Ste 3000	Project Number: 268304
Madison WI, 53717	Project Manager: Andrew Stehn

Classical Chemistry Parameters - Quality Control

Pace Analytical - Madison

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A802179 - % Solids										
Duplicate (A802179-DUP1)	**Source: A180807-01**		Prepared: 02/26/2018 Analyzed: 02/28/2018 11:24							
% Solids	74.9	0.00	% by Weight		78.7			4.88	20	

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TRC Environmental Corporation, Inc.	Project: Madison Kipp - Rain Garden Excavation
708 Heartland Trail, Ste 3000	Project Number: 268304
Madison WI, 53717	Project Manager: Andrew Stehn

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. If the word 'dry' does not appear after the units, results are reported on an as-is basis.
RPD	Relative Percent Difference

Pace Analytical - ECCS Division
2525 Advance Road
Madison, WI 53718
608-221-8700 (phone)
608-221-4889 (fax)

CHAIN OF CUSTODY

No. 8309 Page: 1 of: 1

Lab Work Order #: A180807

Project Number: 268304 PO Number: 103478
Project Name: MKC - Rain Garden
Project Location (City, State): Madison, WI
Turn Around (check one): ☒ Normal ☐ Rush
If Rush, Report Due Date:
Sampled By (Print): ANDREW STEHN

Report To: ANDREW STEHN
Company: TRC
Address 1: 708 Heartland Trail
Address 2: Suite 3000
E-mail Address: astehn@trcsolutions.com

Invoice To: Same as above
Company:
Address 1:
Address 2:

Sample Description	Collection Date	Collection Time	Matrix	Total # of Containers	Preservation Codes / Analyses Requested: A	Comments	Lab ID	Lab Receipt Time
MH-1A-022118	02/21/18	14:30	S	1	X		01	

Preservation Codes
A=None B=HCL C=H_2SO_4
D=HNO_3 E=EnCore F=Methanol
G=NaOH O=Other (Indicate)

Matrix Codes
A=Air S=Soil W=Water O=Other

Other Comments:

	Date	Time		Date	Time
Relinquished By: Andrew Stehn	02/21/18	16:30	Received By: Jessica Cruz	02-21-18	1630
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Custody Seal: ☐ NA ☐ Intact ☐ Not Intact
Shipped Via: Walk-In
Receipt Temp: 0 ice
Thermometer #/ Exp. Date:
Temp Blank: ☐ Y ☐ N

Rev. 12/15

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May 17, 2018

Ben Wachholz
TRC Environmental Corporation, Inc.
230 W Monroe St, Suite 510
Chicago, IL 60606

RE: MKC Storm Sewer/Raingarden - Madison, WI

Enclosed are the analytical results for the samples received by the laboratory on 05/ 11/2018.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. These results are in compliance with the 2009 NELAC Standards and the appropriate agencies listed below, unless otherwise noted in the case narrative. This analytical report should be reproduced in its entirety.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jessica Esser
Project Manager

Certification List			Expires
ADEQ	Arkansas Department of Environmental Quality	17-065-0	09/26/2018
DODELAP	DOD ELAP Accreditation (A2LA)	3269.01	03/31/2019
ILEPA	Illinois Secondary NELAP Accreditation	004366	04/30/2019
KDHE	Kansas Secondary NELAP Accreditation	E-10384	04/30/2019
LELAP	Louisiana Primary NELAP Accreditation	04165	06/30/2018
NCDEQ	North Carolina Dept. of Environmental Quality Accreditation	688	12/31/2018
NJDEP	New Jersey Secondary NELAP Accreditation	WI004	06/30/2018
ODEQ	Oklahoma Department of Environmental Quality Accreditation	2017-154	08/31/2018
TCEQ	Texas Secondary NELAP Accreditation	T104704504-16-7	11/30/2018
WDNR	Wisconsin Certification under NR 149	113289110	08/31/2018

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230 W Monroe St, Suite 510	Project Number: 268304
Chicago IL, 60606	Project Manager: Ben Wachholz

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
OUTFALL PIPE-051018	A181916-01	Soil	05/10/2018	05/11/2018
MH-1A-051018	A181916-02	Soil	05/10/2018	05/11/2018

CASE NARRATIVE

Sample Receipt Information:
2 samples were received on 05/11/2018. Samples were received on ice. Samples were received in acceptable condition.

Please see the chain of custody (COC) document at the end of this report for additional information.

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230 W Monroe St, Suite 510	Project Number: 268304
Chicago IL, 60606	Project Manager: Ben Wachholz

OUTFALL PIPE-051018

A181916-01 (Soil)

Date Sampled
05/10/2018 13:30

Pace Analytical - Madison

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Polychlorinated Biphenyls by EPA Method 8082						**Preparation Batch: A805176**			
PCB-1016	ND	0.0099	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
PCB-1221	ND	0.0055	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
PCB-1232	ND	0.0038	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
PCB-1242	ND	0.0059	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
PCB-1248	**1.9**	0.0071	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
PCB-1254	ND	0.0059	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
PCB-1260	ND	0.0032	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
Total PCBs	**1.9**	0.0099	0.13	mg/kg dry	1	05/15/2018	05/15/2018 12:44	EPA 8082A	
Surrogate: Decachlorobiphenyl			*97.5 %*	*56.6-128*		*05/15/2018*	*05/15/2018 12:44*	*EPA 8082A*	
Surrogate: Tetrachloro-meta-xylene			*101 %*	*69.6-121*		*05/15/2018*	*05/15/2018 12:44*	*EPA 8082A*	
Classical Chemistry Parameters						**Preparation Batch: A805178**			
% Solids	**74.4**		0.00	% by Weight	1	05/15/2018	05/16/2018 08:22	SM 2540B	

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230 W Monroe St, Suite 510	Project Number: 268304
Chicago IL, 60606	Project Manager: Ben Wachholz

MH-1A-051018

A181916-02 (Soil)

Date Sampled
05/10/2018 15:15

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
Pace Analytical - Madison									
Polychlorinated Biphenyls by EPA Method 8082						**Preparation Batch: A805176**			
PCB-1016	ND	0.0083	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
PCB-1221	ND	0.0046	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
PCB-1232	ND	0.0031	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
PCB-1242	ND	0.0049	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
PCB-1248	**0.15**	0.0059	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
PCB-1254	ND	0.0049	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
PCB-1260	ND	0.0027	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
Total PCBs	**0.15**	0.0083	0.11	mg/kg dry	1	05/15/2018	05/15/2018 14:28	EPA 8082A	
Surrogate: Decachlorobiphenyl			*99.3 %*	*56.6-128*		*05/15/2018*	*05/15/2018 14:28*	*EPA 8082A*	
Surrogate: Tetrachloro-meta-xylene			*102 %*	*69.6-121*		*05/15/2018*	*05/15/2018 14:28*	*EPA 8082A*	
Classical Chemistry Parameters						**Preparation Batch: A805178**			
% Solids	**89.3**		0.00	% by Weight	1	05/15/2018	05/16/2018 08:22	SM 2540B	

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230 W Monroe St, Suite 510	Project Number: 268304
Chicago IL, 60606	Project Manager: Ben Wachholz

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control

Pace Analytical - Madison

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A805176 - EPA 3570										
Blank (A805176-BLK1)				Prepared: 05/15/2018 Analyzed: 05/15/2018 12:19						
PCB-1016	ND	0.10	mg/kg wet							
PCB-1221	ND	0.10	mg/kg wet							
PCB-1232	ND	0.10	mg/kg wet							
PCB-1242	ND	0.10	mg/kg wet							
PCB-1248	ND	0.10	mg/kg wet							
PCB-1254	ND	0.10	mg/kg wet							
PCB-1260	ND	0.10	mg/kg wet							
Total PCBs	ND	0.10	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.231*		*mg/kg wet*	*0.2400*		*96.3*	*56.6-128*			
Surrogate: Tetrachloro-meta-xylene	*0.211*		*mg/kg wet*	*0.2400*		*87.8*	*69.6-121*			
LCS (A805176-BS1)				Prepared: 05/15/2018 Analyzed: 05/15/2018 11:54						
PCB-1254	1.77	0.10	mg/kg wet	2.000		88.6	79.1-109			
Surrogate: Decachlorobiphenyl	*0.226*		*mg/kg wet*	*0.2400*		*94.0*	*56.6-128*			
Surrogate: Tetrachloro-meta-xylene	*0.206*		*mg/kg wet*	*0.2400*		*85.8*	*69.6-121*			
Matrix Spike (A805176-MS1)	**Source: A181916-02**			Prepared: 05/15/2018 Analyzed: 05/15/2018 15:25						
PCB-1254	2.02	0.11	mg/kg dry	2.241	ND	90.0	66.7-124			
Surrogate: Decachlorobiphenyl	*0.240*		*mg/kg dry*	*0.2689*		*89.4*	*56.6-128*			
Surrogate: Tetrachloro-meta-xylene	*0.239*		*mg/kg dry*	*0.2689*		*88.8*	*69.6-121*			
Matrix Spike Dup (A805176-MSD1)	**Source: A181916-02**			Prepared: 05/15/2018 Analyzed: 05/15/2018 15:50						
PCB-1254	2.22	0.11	mg/kg dry	2.241	ND	99.3	66.7-124	9.82	20	
Surrogate: Decachlorobiphenyl	*0.266*		*mg/kg dry*	*0.2689*		*99.1*	*56.6-128*			
Surrogate: Tetrachloro-meta-xylene	*0.277*		*mg/kg dry*	*0.2689*		*103*	*69.6-121*			

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Chicago IL, 60606	Project Manager: Ben Wachholz

Classical Chemistry Parameters - Quality Control

Pace Analytical - Madison

Analyte	Result	Limit of Quantitation	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch A805178 - % Solids										
Duplicate (A805178-DUP1)	**Source: A181916-02**		Prepared: 05/15/2018 Analyzed: 05/16/2018 08:22							
% Solids	84.1	0.00	% by Weight		89.3			5.93	20	

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Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. If the word 'dry' does not appear after the units, results are reported on an as-is basis.
RPD	Relative Percent Difference

Page 1 of 1

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

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A181916

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	TRC
Branch/Location:	Madison, WI
Project Contact:	Ben Wachholz
Phone:	608-354-3923
Project Number:	268304
Project Name:	MKC Rain Garden
Project State:	WI
Sampled By (Print):	Ben Wachholz
Sampled By (Sign):	Ben Wachholz
PO #:	103478
Regulatory Program:	

Quote #:	
Mail To Contact:	Ben Wachholz
Mail To Company:	TRC
Mail To Address:	708 Heartland Trail Suite 3000 Madison, WI
Invoice To Contact:	
Invoice To Company:	Same as above
Invoice To Address:	
Invoice To Phone:	608-354-3923

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
	OUTFALL PIPE-051018	5/10/18	13:30	S	N	A	PCBs	5 day TAT	01	
	MH-1A-051018	5/10/18	15:15	S	N	A	PCBs	5 day TAT	02	

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Ben Wachholz	5/11/18 12:58	[illegible]	05-11-18 12:58

PACE Project No.

Receipt Temp = on ice °C

Sample Receipt pH
OK / Adjusted

Cooler Custody Seal
Present / Not Present
Intact / Not Intact

C019a(27Jun2006)

Version 6.0 06/14/06

ORIGINAL